

CLAIMS

1. A coated article comprising:
a coating or layer system supported by a glass substrate, the coating or layer system comprising from the glass substrate outwardly:

- a) a titanium oxide inclusive layer;
- b) a zinc oxide inclusive contact layer;
- c) a silver inclusive layer;
- d) a nickel chrome oxide inclusive layer;
- e) a tin oxide inclusive layer;
- f) a zinc oxide inclusive layer;
- g) a silver inclusive layer;
- h) a nickel chrome oxide inclusive layer; and
- i) a silicon nitride inclusive layer;

wherein the coated article has a visible transmission of at least about 70% and the coating or layer system has a sheet resistance (R_s) of no greater than 5.0 ohms/square.

2. The coated article of claim 1, wherein the coated article comprises an insulating glass (IG) window unit.

3. The coated article of claim 1, further comprising a tin oxide inclusive layer located between layers h) and i), and wherein the layers have the following thicknesses:

- | | |
|---|----------------------|
| a) titanium oxide inclusive layer: | 100-400Å |
| b) zinc oxide inclusive contact layer: | 40-150Å |
| c) silver inclusive layer: | 50-250Å |
| d) nickel chrome oxide inclusive layer: | 15-60Å |
| e) tin oxide inclusive layer: | $\leq 1,000\text{Å}$ |
| f) zinc oxide inclusive layer: | 40-150Å |
| g) silver inclusive layer: | 50-250Å |
| h) nickel chrome oxide inclusive layer: | 15-60Å |

i) silicon nitride inclusive layer:

$\leq 500 \text{ \AA}$.

4. The coated article of claim 1, wherein the coated article comprises an IG window unit and has the following characteristics:

a^*_t (transmissive): -5.0 to 0.0

b^*_t (transmissive): -2.0 to 4.0

$R_g Y$ (outside reflectance): 7 to 13%

a^*_g (outside reflective): -3.0 to 2.0

b^*_g (outside reflective): -5.0 to 1.0

SHGC: ≤ 0.45

SC: ≤ 0.49

$T_{\text{ultraviolet}}$: ≤ 0.36 .

5. The coated article of claim 4, wherein the coated article comprises an IG window unit and has the following characteristics:

a^*_t (transmissive): -3.5 to 1.5

b^*_t (transmissive): 1.0 to 3.0

$R_g Y$ (outside reflectance): 9 to 11%

a^*_g (outside reflective): -2.0 to 0.5

b^*_g (outside reflective): -4.0 to -1.0

SHGC: ≤ 0.40

SC: ≤ 0.46

$T_{\text{ultraviolet}}$: ≤ 0.33 .

6. The coated article of claim 1, wherein at least one of the zinc oxide inclusive layers b) and f) comprises zinc-aluminum oxide, and where the coated article further comprises a tin oxide inclusive layer located between layers h) and i).

7. A coated article comprising:
a substrate;
a first dielectric layer supported by the substrate;
a lower contact layer comprising zinc oxide;
an infrared (IR) reflecting layer comprising silver;
an upper contact layer comprising at least one of an oxide of nickel, an oxide of chromium, and nickel chrome oxide; and
wherein the IR reflecting layer comprising silver is located between and in contact with the lower and upper contact layers.

8. The coated article of claim 7, wherein the lower contact layer comprises zinc aluminum oxide.

9. The coated article of claim 7, wherein the coated article has a visible transmission of at least 70% and a sheet resistance (R_s) of no greater than 5.0 ohms/square.

10. The coated article of claim 7, wherein the coated article comprises an insulating glass (IG) window unit.

11. The coated article of claim 7, further comprising
a second dielectric layer provided over top of and in contact with the upper contact layer;
another lower contact layer comprising zinc oxide;

another infrared (IR) reflecting layer comprising silver which contacts the another lower contact layer;

another upper contact layer comprising nickel chrome oxide, the another IR reflecting layer being sandwiched between and contacting the another lower contact layer and the another upper contact layer; and

a third dielectric layer provided over top of and in contact with the another upper contact layer.

12. The coated article of claim 11, wherein the first dielectric layer comprises titanium oxide.

13. The coated article of claim 11, wherein the second dielectric layer comprises tin oxide.

14. The coated article of claim 11, wherein the third dielectric layer comprises one of silicon nitride and tin oxide, and wherein the coated article further comprises a diamond-like carbon (DLC) inclusive layer provided as an overcoat.

15. The coated article of claim 7, wherein the coated article comprises an IG window unit and has the following characteristics:

a^*_t (transmissive): -5.0 to 0.0

b^*_t (transmissive): -2.0 to 4.0

$R_g Y$ (outside reflectance): 7 to 13%

a^*_g (outside reflective): -3.0 to 2.0

b^*_g (outside reflective): -5.0 to 1.0

SHGC: ≤ 0.45

SC: ≤ 0.49

$T_{\text{ultraviolet}}$: ≤ 0.36 .

16. The coated article of claim 15, wherein the coated article comprises an IG window unit and has the following characteristics:

a^*_t (transmissive):	-3.5 to 1.5
b^*_t (transmissive):	1.0 to 3.0
$R_g Y$ (outside reflectance):	9 to 11%
a^*_g (outside reflective):	-2.0 to 0.5
b^*_g (outside reflective):	-4.0 to -1.0
SHGC:	≤ 0.40
SC:	≤ 0.46
$T_{\text{ultraviolet}}$:	≤ 0.33 .

17. An insulating glass (IG) window unit comprising:

first and second substrates spaced from one another,

a coating supported by the first substrate, the coating including first and second IR reflecting layers, each of the IR reflecting layers being sandwiched between and contacting a respective pair of contact layers;

wherein the coating has a sheet resistance (R_s) no greater than 3.5 ohms/square; and

wherein the IG window unit has a visible transmission of at least 70%, a solar heat gain coefficient (SHGC) no greater than 0.45, and outside reflective color characterized by $a^*_{\text{outside reflective}}$ from -3.0 to 2.0 and $b^*_{\text{outside reflective}}$ from -5.0 to 1.0.

18. The IG window unit of claim 17, wherein the IG window unit has a SHGC no greater than 0.40 and a shading coefficient (SC) no greater than 0.46.

19. The IG window unit of claim 17, wherein the pair of contact layers sandwiching the first IR reflecting layer therebetween includes a lower contact layer and an upper contact layer, and wherein the first IR reflecting layer includes Ag, and wherein the lower contact layer comprises zinc oxide and is located between the first IR reflecting layer and the substrate, and the upper contact layer comprises at least one of nickel oxide, chromium oxide, and nickel-chrome oxide.

20. The IG window unit of claim 19, wherein the lower contact layer comprises zinc aluminum oxide and the upper contact layer comprises NiCrO_x .

21. A coated article comprising:
a coating supported by a glass substrate, the coating comprising an infrared (IR) reflecting layer sandwiched between and contacting first and second contact layers; and
wherein the first contact layer includes zinc oxide and the second contact layer comprises at least one of nickel oxide, chromium oxide, and nickel-chrome oxide.

22. The coated article of claim 21, wherein the first contact layer comprises ZnAlO_x .

23. The coated article of claim 21, wherein the second contact layer comprises NiCrO_x .

24. The coated article of claim 21, wherein the coating is durable, and the coated article has a visible transmission of at least 70% and the coating has a sheet resistance (R_s) no greater than 3.5 ohms/square, and wherein the first contact layer is located between the IR reflecting layer and the glass substrate.

25. The coated article of claim 21, wherein the coated article comprises an IG window unit and has the following characteristics:

a^*_t (transmissive):	-5.0 to 0.0
b^*_t (transmissive):	-2.0 to 4.0
$R_g Y$ (outside reflectance):	7 to 13%
a^*_g (outside reflective):	-3.0 to 2.0
b^*_g (outside reflective):	-5.0 to 1.0
SHGC:	≤ 0.45
SC:	≤ 0.49
$T_{\text{ultraviolet}}$:	≤ 0.36 .

26. The coated article of claim 25, wherein the coated article has the following characteristics:

a^*_t (transmissive):	-3.5 to 1.5
b^*_t (transmissive):	1.0 to 3.0
$R_g Y$ (outside reflectance):	9 to 11%
a^*_g (outside reflective):	-2.0 to 0.5
b^*_g (outside reflective):	-4.0 to -1.0
SHGC:	≤ 0.40
SC:	≤ 0.46
$T_{\text{ultraviolet}}$:	≤ 0.33 .

27. A coated article comprising:
a coating or layer system supported by a glass substrate, the coating or layer system comprising from the glass substrate outwardly:

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oxide;

a) a dielectric layer(s);
b) a zinc oxide inclusive contact layer;
c) a silver inclusive layer;
d) a contact layer including at least one of nickel oxide and chrome

- e) a dielectric layer(s);
f) a zinc oxide inclusive contact layer;
g) a silver inclusive layer;
h) a contact layer; and
i) a dielectric layer(s);

wherein the coated article has a visible transmission of at least about 70% and the coating or layer system has a sheet resistance (R_s) no greater than 5.0 ohms/square.

28. The coated article of claim 27, wherein the a) dielectric layer(s) comprises titanium oxide.

29. The coated article of claim 27, wherein the e) dielectric layer(s) comprises tin oxide, and wherein the contact layer d) comprises NiCrO_x .

30. The coated article of claim 27, wherein the dielectric layer(s) i) comprises at least one of silicon nitride and tin oxide.

31. The coated article of claim 27, wherein the contact layers d) and h) each comprises NiCrO_x .

32. The coated article of claim 27, wherein at least one of the zinc oxide inclusive contact layers b) and f) comprises ZnAlO_x .

33. The coated article of claim 27, wherein the coated article comprises an IG window unit.

34. The coated article of claim 27, further comprising a diamond-like carbon (DLC) inclusive layer provided over the dielectric layer(s) i).

35. A method of making a coated article, the method comprising:
providing a substrate;
sputtering a first dielectric layer onto the substrate;
sputtering a lower contact layer comprising zinc oxide onto the substrate over the first dielectric layer;
sputtering an infrared (IR) reflecting layer over the lower contact layer;
sputtering an upper contact layer comprising at least one of an oxide of nickel, an oxide of chromium, and nickel chrome oxide, onto the substrate over and in contact with the IR reflecting layer; and
sputtering at least one dielectric layer onto the substrate over the upper contact layer.

36. The method of claim 35, further comprising ion beam depositing a diamond-like carbon (DLC) inclusive layer onto the substrate over the at least one dielectric layer.

37. A coated article comprising:
a substrate;
a first dielectric layer supported by the substrate;
an infrared (IR) reflecting layer comprising silver;

an upper contact layer comprising at least one of an oxide of nickel, an oxide of chromium, and nickel chrome oxide;

another dielectric layer comprising tin oxide provided over and in contact with the upper contact layer; and

another dielectric layer comprising silicon nitride provided over the another dielectric layer comprising tin oxide.

38. The coated article of claim 37, further comprising a lower contact layer comprising zinc aluminum oxide located below and in contact with the IR reflecting layer.

39. The coated article of claim 37, wherein the coated article has a visible transmission of at least 70% and coating thereon has a sheet resistance (R_s) of no greater than 5.0 ohms/square.

40. The coated article of claim 37, wherein the coated article comprises an insulating glass (IG) window unit.

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